

Appln. No. 09/599,042

Docket No. 22-0127

REMARKS

Prior to the aforementioned Office action, claims 2-5, 12-16, 20-22 and 29-32 were said to be allowable. In the Office action, the allowability of claims 2-5 and 29-32 has been withdrawn. Now, only claims 12-16 and 20-22 are said to be allowable. Claims 1-11, 17-19 and 23-34 have all been rejected as allegedly unpatentable over various combinations of newly cited art. By this amendment, claims 23-27 have been cancelled and the remaining claims have been amended to distinguish the invention over the newly cited art, as discussed in more detail below. Thus, claims 1-22 and 28-34 remain in the application and are believed to be patentable over the art of record.

Applicant notes with appreciation the continued indication of allowability of claims 12-16 and 20-22. Applicant has not yet rewritten these claims to be independent of any rejected claim because Applicant still believes that rejected claim 11, from which these claims depend, should also be allowable as now amended, for reasons discussed below.

In section 4 of the Office action, claims 1-3, 5-10, 23-30 and 32-34 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campanella (US 6,333,922) in view of Brooks (US 6,577,524). The Examiner argues that "Campanella teaches a method for power gating a downlink beam frame signal ... comprising: transmitting ... at least a first header signal ... a second header signal; and a second payload signal" The Examiner cites a number of figures and textual passages in support of this contention, but Applicant believes that none of the specifically cited passages is relevant to the present invention.

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In particular, it is Applicant's position that Campanella does not teach or suggest a method for power gating, in the sense that this expression is used in the present application.

- Referenced FIG. 1 depicts a satellite communication system in general, but does not any suggestion of power gating.
- Referenced FIG. 10 is a schematic diagram illustrating synchronization and multiplexing operations for recovering coded broadcast channels at a receiver, but there is no suggestion of power gating of a transmitter.
- Referenced text at column 4, lines 1-4 and 18-26 discusses, respectively, routing of multiple channels to one or more TDM downlink beams, and the format of a broadcast channel frame. Again there is no mention of transmitter power gating.
- Referenced FIG. 4 depicts broadcast channel frame formats, but again there is no suggestion of transmitter power gating.
- Referenced text at column 6, lines 16-19 describes a frame format, but there is no suggestion of transmitter power gating.
- Referenced text at column 7, lines 18-33 discusses the broadcast channel frame format of FIG. 4, but without reference to or suggestion of transmitter power gating.
- Referenced text at column 15, lines 5-11 discusses time gating for a "correlation event." Closer review of the patent specification reveals that this textual passage is concerned with channel recovery and synchronization. The "correlation event" referred to has to do with recognition of a master frame preamble (MFP) of 96 symbols, and has nothing at all to do with transmitter power gating.

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The Examiner further observes: "But Campanella fails to teach when a power gating signal is active, removing RF power from at least one of the first header signal and first payload signal in combination, and the second header signal and second payload signal in combination, thereby reducing DC power consumption." This sentence is, at best, difficult to understand in view of the fact that Campanella does not teach or suggest a power gating signal of any kind. Therefore, the alleged only deficiency of Campanella is not cured by the additional citation of Brooks, which, in any event, does not cure the perceived deficiency.

Brooks discloses memory structures, portions of which are referred to as "payload portions" because they are used for storage of "payload data," a term that is used only to distinguish from memory cells that contain "administrative data." (See column 2, lines 31-42.) The Brooks invention concerns memory structures that have portions that are selectively disabled for power conservation. Thus, the Brooks patent pertains to selectively disabling memory structures for purposes of power conservation, while the present invention uses transmitter power gating for purposes of power conservation. The only commonality between Brooks and the present invention is that both are concerned with power conservation, but in totally different contexts. The Examiner appears to have attached more than a little significance to the term "payload data" as used in the Brooks memory structure, and also appears to have equated the "payload" portions of the Brooks memory structure with the payload data transmitted in the present invention. Brooks teaches disabling unused portions of a memory structure that happen to contain "payload data," and does not teach or suggest selectively disabling or power gating an RF transmitter.

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Accordingly, the combination of Campanella and Brooks does not render obvious the present invention, especially as defined in amended claims 1 and 28, for example. First, the two references are in totally different fields of endeavor. Second, and probably because of the disparate fields of endeavor, there is no suggestive or incentive provided in either reference that they might be usefully combined. Third, because nothing in the two references teaches or suggests power gating of a transmitter, the combination of the two references, if attempted, would not result in the present invention.

With regard to claims 2 and 29, the Examiner asserts that Campanella teaches hopping the downlink beam frame signal between at least two terrestrial cells (citing FIG. 1 and column 3, line 42 to column 4, line 7). Campanella talks about routing channels to one or more downlink beams, but there is no disclosure of hopping the beam sequentially from one downlink beam to the next. In any event, even if Campanella did disclose downlink beam hopping, this would not overcome the deficiencies noted above in the rejection of the independent claims.

With regard to claims 3 and 30, the Examiner asserts that Campanella teaches the step of activating the power gating signal based on the terrestrial cell which the downlink beam frame signal is currently hopped.

- The referenced text at column 3, line 42 to column 4, line 7 discloses multiple downlink beams, but not beam hopping, and certainly not a step of activating a power gating signal.
- The referenced text at column 15, lines 1-8 pertains to signal acquisition and recovery, as discussed earlier, and not to power gating.

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Regarding claims 5 and 32, the Examiner asserts that Campanella teaches the step of activating the power gating signal in order to maintain at least one data queue on average approximately at preselected occupancy level.

- The referenced text at column 6, lines 5-8 pertains to selection of a frame period duration for a particular purpose, and not to power gating.
- The referenced text at column 12, lines 38-47, relates generally to buffering but again has nothing to do with power gating signals.

Regarding claims 6 and 33, the Examiner asserts that Campanella teaches the step of transmitting a first flush signal and a second flush signal, citing FIG. 11.

Applicant notes that FIG. 11 depicts operations performed in a receiver, not in a transmitter. (See brief description of the drawings at column 2, lines 64-67.)

Accordingly, it is difficult to see how the figure pertains to the subject matter of the invention. The Examiner concedes that Campanella fails to teach certain elements of the claims, but goes on to rely again on Brooks for its alleged teaching of "removing power from at least one of the first header signal ..." and so forth. Brooks, however, pertains to removing power from unused portions of a memory structure, and not to selectively removing power from an RF transmitter. As with the invention of claim 1 or claim 28, the invention of claim 6 or claim 33 would not have been rendered obvious by the combination of the two cited references, for the same reasons discussed above with reference to claims 1 and 28.

Regarding claims 7, 8 and 9, the Examiner asserts that Brooks teaches the respective additionally recited features. However, as pointed out above, Brooks pertains to removing power from selected portions of a memory structure and not to

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selectively removing power from an RF transmitter for purposes of power gating.

Therefore, it is believed that these dependent claims should be allowable with independent claim 1.

Regarding claims 10 and 34, the Examiner asserts that Brooks teaches the additionally recited features. The cited text beginning at column 2, line 43 pertains to coupling of a power signal to various portions of a memory structure. Once again, any similarity with the present invention seems to be based solely on use of the term "payload" in each.

Regarding claims 23-27, drawn to a power gated frame signal, these claims have been cancelled.

In section 5 of the action, claims 4 and 31 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campanella in view of Brooks and further in view of Trans (US Appln. No. 2003/0086515). The latter reference is relied on for an alleged teaching of activating a power gating signal based on a statistical multiplexing estimate of downlink frame utilization. It is not clear from the cited passages in Trans whether transmitter gating is being used for a power conservation purpose or for some other purpose. In other words, the Examiner's assertion that Trans teaches "activating a power gating signal" is not supported in the cited text, although Applicant cannot say for a certainty that there is no support for the Examiner's contention hidden somewhere else in the 96-page specification and 96 sheets of drawings. In any event, Applicant believes that the claims should be allowable as dependent claims, for the same reason that amended independent claims 1 and 28 should be allowable.

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In section 6 of the action, claims 11 and 17-19 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Campanella in view of Larrick (US 6,690,741), and further in view of Brooks.

Regarding claim 11, the Examiner asserts that Campanella teaches a power-gating module for power gating a downlink beam frame signal. (As discussed above with respect to other claims, Applicant finds no teaching of power gating in Campanella.) Larrick is relied on for its teaching of a "power gate controller" (134, FIG. 8), which clearly controls power to a gated power amplifier (160). This disclosure of Larrick pertains to an ultra wideband data transmission system, in which short pulses of relatively wide bandwidth are transmitted. Ultra wideband (UWB) systems are used to transmit data in radar systems and communication systems. The power gate controller is part of the circuitry that produces the UWB pulses. It is not, however, used to gate a transmitter to conserve downlink power, as in the present invention. When viewed in this proper context, then, the only similarity between the present invention and the Larrick disclosure is that they both include a power switch of some kind. Nothing in Larrick suggests power gating an RF transmitter to conserve downlink power. Therefore, the combination of the teachings of Campanella and Larrick would not have been obvious and neither patent document contains any suggestion that they might be usefully combined. The Examiner further relies on Brooks for its alleged teaching of a power gating signal, but as Applicant has pointed out above, Brooks pertains to power conservation in a memory structure, not in an RF transmitter, and contains no suggestion that its teachings might be usefully combined with those of Campanella and Larrick. Accordingly, it is Applicant's position that the Examiner has not made out a

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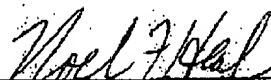
prima facie case of obviousness of the claimed invention based on these three references.

To further distinguish the invention from the cited art, the independent claims have been amended to mention in each instance "a transmitter," and to further recite where appropriate that it is the transmitter that is power gated, at times when certain portions of data are being presented for transmission. Certain ones of the dependent claims have also been amended for consistency with the independent claims. These changes are believed to distinguish more clearly over the Brooks patent disclosure, which pertains to selectively disconnecting power from a memory structure.

In view of the foregoing remarks, Applicant respectfully requests withdrawal of the rejections and formal allowance of claims 1-22 and 28-34.

Respectfully submitted,

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